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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/905,583	07/13/2001	Martin Eickhoff	10537/120	4271

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EXAMINER

FERGUSON, MARISSA L

ART UNIT PAPER NUMBER

2855

DATE MAILED: 03/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/905,583

Applicant(s)

EICKHOFF ET AL.

Examiner

Marissa L Ferguson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 23 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-71 is/are pending in the application.
- 4a) Of the above claim(s) 23-27 and 51-71 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 and 28-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

1. Claims 23-27 and 50-71 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 6.
2. Applicant is advised to cancel claims 23-27 and 50-71

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 28-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular claim 28, recites a method of using a pressure sensor, however no steps are presented as to how the "using" is performed. The provision of combustion engine is a general intended use not a general method step.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4,6,8-12,18 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kleven et al (U.S. Patent 4,926,695).

Regarding claims 1 and 21, Kleven et al. teaches a vortex sensor responsive to a pressure (Column 11, Line 51 and see claim 17), with a housing (95) having an interior chamber (105), a steel diaphragm (118) sealing the interior chamber, a deformable first measuring element (115) coupled to the diaphragm (118) and an arrangement coupled to the first measuring element, the arrangement being configured to generate a signal in response to a deformation of a diaphragm and to generate a signal in response to a deformation of the first measuring element (Column 6, Lines 52-67).

Regarding claim 2, Kleven et al. teaches a first measuring element that includes a bendable beam having one end suspended (see element 115 and Figure 8).

Regarding claims 3 and 18, Kleven et al. teaches an overload protection stop element, the stop element being configured to oppose a deformation force in response to a deformation of the first measuring element (Column 6, Lines 42-52).

Regarding claim 4, Kleven et al. teaches a stop element including a flexible harder/stiffer second measuring element (101) that is arranged for different pressures.

Regarding claim 6, Kleven et al. teaches at least one measuring element and a stop element that includes at least one piezoelectric element (Column 6, Lines 37-42).

Regarding claims 8 and 9, Kleven et al. teaches a transmission element (51) including one of elasticity, stiffness, and ranges that transmits force from the diaphragm to measuring elements (Column 4, Lines 47-60).

Regarding claim 10, Kleven et al. teaches a transmission elements (51 and 54) including a chip (wafer 70 and see figures 6 and 7)

Regarding claim 11, the measuring element is a bar (115).

Regarding claim 12, the chip is a single chip (70).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kleven et al. (U.S. Patent 4,926,695) in view of Last et al. (U.S. Patent 5,824,910).

Kleven et al. teaches the invention with the exception of a stop element including a diaphragm and a bendable bar having one end freely suspended. However, a free suspended beam arrangement can be obtained in various ways. For example, Last et al. teaches a thin wafer sensor arrangement with a diaphragm (see element 8) and a bendable beam (4) that has one end freely suspended (see Figure 1).

Since both Kleven et al. and Last et al. teach stop elements with freely suspended beams, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention taught by Kleven et al. to include the stop element arrangement as taught by Last et al. for the purpose of allowing movement of the beam to any given amount of pressure.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kleven et al. (U.S. Patent 4,926,695) in view of Dufour (U.S. Patent 5,317,917).

Kleven et al. teaches the invention with the exception of a piezoresistor connected to a Wheatstone bridge. However, piezoresistor Wheatstone bridge configurations are well known and commonly used in the art of pressure/flow sensors. For example, Dufour teaches a beam arrangement with a piezoresistor Wheatstone configuration (Column 5, Lines 24-27).

Since Kleven et al. and Dufour both teach sensors with beam arrangements, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention taught by Kleven et al. to include the Wheatstone arrangement as taught by Dufour for general balancing and accurate measurement.

7. Claims 13-17, 19, 20, 22 and 28-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleven et al. (U.S. Patent 4,926,695).

Regarding claims 13-17, 19 and 20, Kleven et al. teaches the invention claimed, however he does not explicitly disclose various pressure ranges. However, it would have been obvious at the time the invention was made to modify the device to measure any desirable pressure range, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 22, although Kleven et al. does not explicitly recite a aiming off allowance, it would have been obvious to modify the element for related allowance

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because the rocking sensing means (101) has a curved configuration (101A) and the pivoting characteristic (102) provides some manufacturing, tolerance, and allowance.

Regarding claims 28-49, Kleven et al's arrangement can be used for any intention including an internal combustion engine.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marissa L Ferguson whose telephone number is (703) 305-3194. The examiner can normally be reached on (M-T) 6:30am-4:00pm and every other (F) 7:30am-4:00.

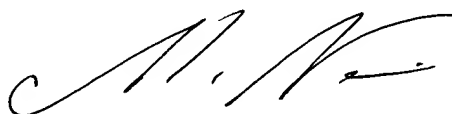
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Marissa L Ferguson  
Examiner  
Art Unit 2855

*HLF*  
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March 9, 2003



**MAX NOORI  
PRIMARY EXAMINER**